

Fifth
Generation
S Y S T E M S

Hardy Avenue, B-350
Baton Rouge, Louisiana 70809
483 Toll Free (800) 225-2775
67-0075 Toll Free (800) 228-6127

10 Megabytes/8 Minutes
For IBM-PC™, XT™, AT™ and Compatibles

**EAST
BACK**



Instruction Manual

FASTBACK*

Table of Contents

Section 1: Introduction	page 1.
Section 2: Installing FASTBACK	page 2.
Section 3: Running FASTBACK	page 3.
Section 4: Running FRESTORE	page 4.
Section 5: FASTBACK—Advanced Use	page 5.
Section 6: FRESTORE—Advanced Use	page 9.
Section 7: FINSTALL	page 10.
Section 8: Catalog File	page 11.
Section 9: Speed	page 12.
Section 10: Hard Disk Errors	page 13.
Section 11: Before Formatting Your Fixed Disk	page 14.
Section 12: In Case of Trouble	page 15.

IBM-PC, XT, AT, and PC-DOS are registered trademarks of International Business Machines, Inc. MS-DOS is a registered trademark of Microsoft, Inc. © Copyright 1984, 1985 Fifth Generation Systems.

FASTBACK*

Section 1: Introduction

Using the FASTBACK Instruction Manual

This manual has been designed to help you use FASTBACK—quickly and easily.

You will find that FASTBACK is very user-friendly and be able to file this manual in a safe place.

What You Will Need

- ☐ Your FASTBACK registration card
- ☐ Your FASTBACK distribution diskette
- ☐ One (1) formatted diskette
- ☐ Diskettes (formatted or unformatted)

For your first backup procedure, a full PC-DOS (360K each). A full PC-AT will require 15-16 diskettes. If you have more or less data on your hard disk, you will need accordingly.

Registration Card

Please take a few minutes to fill out the FASTBACK registration card and mail it in the mail. The information will be used for our products. Also, our technical support group will be able to help you.

Your FASTBACK Distribution Diskette

The distribution diskette contains a label, a signature. The label is important because it is an authorized copy. Fifth Generation Systems, Inc. distributes the distribution diskette free of charge at any time. It is very difficult to destroy) is read by FASTBACK. The programs, which appear as files, are copied to other diskettes for safekeeping. The programs are fairly easy to erase, so make sure you are particularly important to keep copies of FASTBACK recovering your data. The distribution diskette

Copy Protection

FASTBACK is copy protected. FRESTORE

As a registered user, you may obtain a copy of FASTBACK by signing the enclosed REQUEST FOR A COPY OF FASTBACK and mailing it to Fifth Generation Systems, Inc. (\$25.00) to Fifth Generation Systems, Inc. FASTBACK with your name in the sign-off area. Please be careful—it has teeth. Corporate users should

Section 1: Introduction

Using the FASTBACK Instruction Manual

This manual has been designed to help you enjoy the time saving benefits of FASTBACK—quickly and easily.

You will find that FASTBACK is very user friendly. After the first use you will be able to file this manual in a safe place.

What You Will Need

- ☐ Your FASTBACK registration card
- ☐ Your FASTBACK distribution diskette
- ☐ One (1) formatted diskette (for backup copy)
- ☐ Diskettes (formatted or unformatted)

For your first backup procedure, a full PC-XT will require 20-25 diskettes (360K each). A full PC-AT will require 15-18 diskettes (1.2Mb each). If you have more or less data on your hard disk, adjust the number of diskettes accordingly.

Registration Card

Please take a few minutes to fill out the FASTBACK registration card and drop it in the mail. The information will be used to notify you of updates and new products. Also, our technical support group will be able to identify you.

Your FASTBACK Distribution Diskette

The distribution diskette contains a label, 3 programs, and a special magnetic signature. The label is important because it identifies your diskette as an authorized copy. Fifth Generation Systems will replace your labeled distribution diskette free of charge at any time. The magnetic signature (which is very difficult to destroy) is read by FASTBACK each time the program executes. The programs, which appear as a standard DOS directory, may be copied to other diskettes for safekeeping. As with any DOS diskette, the programs are fairly easy to erase, so make sure you have backup copies. It is particularly important to keep copies of FRESTORE, as it is essential to recovering your data. The distribution diskette is not required for FRESTORE.

Copy Protection

FASTBACK is copy protected. FRESTORE is not.

As a registered user, you may obtain a copy of FASTBACK without copy protection by signing the enclosed REQUEST TO OBTAIN A COPYABLE VERSION OF FASTBACK and mailing it with the required registration fee (\$25.00) to Fifth Generations Systems, Inc. You will receive a serialized copy of FASTBACK with your name in the sign-on message. Read the agreement carefully—it has teeth. Corporate users should consider site licensing.

page 1.

page 2.

page 3.

page 4.

page 5.

page 9.

page 10.

page 11.

page 12.

page 13.

page 14.

page 15.

Section 3: Running FASTBACK

1: Place your FASTBACK distribution diskette in drive 'A' or 'B'.

2: Type:

FASTBACK ♦

3: If your computer responded with "bad command", type:

CD \FASTBACK ♦
FASTBACK ♦

4: Answer each of the questions by typing ♦. This will back up all the files on drive 'C:'.

5: After a few seconds, the program will ask that you remove the distribution diskette.

6: FASTBACK will immediately begin reading files from the hard disk. As each file is read, its path and name are displayed in the lower left portion of the screen. Prompts for disk changes are displayed in the upper left section of the screen. Center your attention on the disk change section. As each diskette is filled, you will be prompted (with a beep) to change diskettes. If your system has 2 drives, FASTBACK will alternate so you can change diskettes in one drive while a diskette is being filled in the other drive. It may sound complicated, but the trick is to watch for the 'CHANGE DISKS' message to appear (a beep will also sound).

It's not necessary to label the diskettes since FASTBACK is labeling each one magnetically. Just stack them in order and keep them in a group (old diskette boxes work great). FASTBACK uses this label to make sure disk changes are done properly. If a disk is put in twice, a warning will appear.

IMPORTANT!!!

The red light on the diskette drive may be on during disk changes. That's ok, go ahead and change the disk. FASTBACK monitors the status of the disk drive to determine when a disk change occurs. To do this, the motor must be kept running. Just follow the screen prompts and ignore the red light.

7: When the backup is complete, FASTBACK will announce several statistics which may be of interest. Remember to remove the last diskette!

8: If you want to print a directory of your backup set, type:

CD \FASTBACK ♦
PRINT FASTBACK.CAT ♦

Section 4: Running FRESTORE

The primary purpose of FRESTORE is to retrieve files from diskettes created by FASTBACK. However, it can also search for particular files in your backup set and compare backup files with files on the hard disk. To restore a file (or files), follow the instructions below.

1: Type:

FRESTORE ♦

2: If your computer responded with "bad command", type:

CD \FASTBACK ♦
FRESTORE ♦

3: The menu screen will appear.

4: Use the cursor control keys 'Up-Arrow', 'Down-Arrow', 'Pg-Up', 'Pg-Dn', 'Home', and 'End' to move to the file of interest.

5: To compare a file in the backup set with the file of the same name on the hard disk, type 'V' (verify).

6: To restore a file from the backup set to the hard disk, type 'R' (restore).

7: Control-V and Control-R will start with the current file and verify or restore files until Control-C is pressed.

8: Notice the 'replace' option at the top center. When you ask for a file to be restored, and that file exists on the hard disk, FRESTORE will either ask if it's ok to delete the existing file, automatically delete the existing file, or skip the operation entirely. The action is determined by the 'replace' option which may be changed by pressing '1', '2', or '3'.

9: When diskettes are required, FRESTORE will issue the appropriate prompts.

Section 5: FASTBACK—Advanced Use

The program is completely contained in the file "FASTBACK\FASTBACK.EXE". Copy this file to other programs to prevent the 'Bad command' error.

There are three ways of invoking FASTBACK. The optional switches, defined later, are the same for all three.

Method 1—Interactive

C>FASTBACK [optional switches] ♦

Which hard disk to copy from (return for default):

Most systems only have one hard disk. If you have more than one hard disk, you may want to specify a drive letter. Backups may NOT be made from floppy disks. Consolidate data from several diskettes before running FASTBACK.

Which directory to back up? (return for default):

This specifies the starting directory. The default is the current directory. It may be selected by pressing ♦.

Backup subdirectories of d:\path? (return for default):

A 'Y' answer will include all subdirectories. A 'N' answer will include only the first two questions) to be included in the backup. Starting in the root directory and including the hard disk is included.

Which file to back up? (return for *.*):

Similar to other DOS commands (like DIR), you can specify files for particular files. A question mark '?' will match any character while an asterisk will match multiple characters. "*" will include all files.

Skip files which haven't changed since last backup:

Each time a file is changed, DOS sets a date and time stamp. If you answer 'Y', FASTBACK will search for files that have changed since the last backup. As the file is backed up, the backup file is called an 'ir'.

is to retrieve files from diskettes created
to search for particular files in your backup
files on the hard disk. To restore a file (or

with "bad command", type:

Up-Arrow', 'Down-Arrow', 'Pg-Up',
move to the file of interest.

set with the file of the same name on the

up se the hard disk, type 'R' (restore).

start with the current file and verify or
pressed.

top center. When you ask for a file to be
the hard disk, FRESTORE will either ask
le, automatically delete the existing file, or
e action is determined by the 'replace'
by pressing '1', '2', or '3'.

FRESTORE will issue the appropriate

FASTBACK.

Section 5: FASTBACK—Advanced Use

The program is completely contained in the file
"FASTBACK\FASTBACK.EXE". Copy this file to the same area as your
other programs to prevent the 'Bad command' message from DOS.

There are three ways of invoking FASTBACK, each detailed below. The
optional switches, defined later, are the same for each method.

Method 1—Interactive

C>FASTBACK [optional switches] ♦

Which hard disk to copy from (return for 'C:') d ♦

Most systems only have one hard disk, drive 'C:'. As shown in the
prompt, pressing '♦' is the same as entering 'C:♦'. If your system has
more than one hard disk, you may choose which one to read.
Backups may NOT be made from floppy disks. If you want to
consolidate data from several diskettes, copy the files to a hard disk
before running FASTBACK.

Which directory to back up? (return for '\') path ♦

This specifies the starting directory. The default, the root directory,
may be selected by pressing ♦.

Backup subdirectories of d:path? (return for 'Y') <Y/N> ♦

A 'Y' answer will include all subdirectories of d:path (specified by the
first two questions) to be included in the file search. Note that by
starting in the root directory and including subdirectories, the entire
hard disk is included.

Which file to back up? (return for *.*) filename.ext ♦

Similar to other DOS commands (like 'DIR'), FASTBACK can search
for particular files. A question mark will match a single character
while an asterisk will match multiple characters. The default answer
"*.*" will include all files.

Skip files which haven't changed since last backup? (return for 'N') <Y/N> ♦

Each time a file is changed, DOS sets a bit in the directory. If you
answer 'Y', FASTBACK will search for those files and exclude all
others. As the file is backed up, the bit is reset. A backup which only
includes changed files is called an 'incremental' backup.

FASTBACK*

page 6.

Method 2—Command Line

FASTBACK *d:* *path* <Y/N> *filename.ext* <Y/N> [*optional switches*] ♦

This method is handy for running FASTBACK from a batch file. It's organization is consistent with method 1. Simply answer each question, in order, on the command line. Separate the answers with a space or spaces. Note that each question must be answered. As a debugging aid, FASTBACK will still issue the prompts and display the command line argument.

See method 1 for a detailed description of each argument.

Example (backs up all files on drive 'C:'):

```
C>FASTBACK C: \ Y *.* N ♦
```

Method 3—Command File

FASTBACK @*filename.ext* [*optional switches*] ♦

Although method 2 is great for full backups or incremental backups of a single hard disk, it is rather clumsy for backing up groups of unrelated files (different drives, different directories, different names, etc.). A command file will allow different drives, directories, and even individual files to be grouped into a single backup run.

The command file may reside anywhere. The name may be any legal DOS file name. Like batch (".BAT") files, it should contain only valid ASCII characters (some word-processing editors put extra characters in the file). The last line must be blank. The syntax is very similar to the DOS 'BACKUP' command.

Each line should follow the format listed below:

d:directory\directory\... \filename.ext [/S] [/M] [/V]

<i>d:</i>	is the drive name
<i>directory</i>	is the path
<i>filename.ext</i>	is the filename and extension
/S (<i>optional</i>)	causes subdirectories to be included
/M (<i>optional</i>)	selects only the files which have changed
/V (<i>optional</i>)	performs read-after-write verify

In modes 1 and 2, FASTBACK will delete the catalog file prior to a full backup. When running from a command file, this action is under user control.

FASTBACK*

The special line

/DELCAT

will cause the catalog file to be deleted. U
command file, a new catalog file will be cr

Example (invokes command file '\FB.CM

```
C>FASTBACK @ \FB.C
```

Example command file (back up all of driv

```
C:\** /S  
D:\** /S
```

Optional Switches

To provide added flexibility, FASTBACK v
the command line. Following DOS conver
by a forward slash ('/'). Each switch is list

/v

Causes all diskettes to be read immediately
This is not as useful as it sounds because:

- 1: Verify at least doubles the backup time.
- 2: An on-the-fly verify only verifies that the disk. It doesn't verify that the data is on the disk. For instance, a bad memory chip can corrupt the copy process. This corrupted data will be copied to the disk, but it is NOT the same data that was on the original disk.
- 3: An on-the-fly verify does not guarantee that a mis-seated diskette. That is, if the diskette is not read properly, to be read it would need to be read another way.
- 4: FASTBACK implements error correction. If a bad sector (one per track, each side) is found, sectors may be recovered from a 720K diskette is there even though the sector may be bad. FASTBACK WAS MADE! This places the burden on the user without wasting any time.

When should '/v' be used? In our opinion, use it for comparison. If you really want to be safe, use it with FRESTORE, then make another backup (of course). Why was this option included? See the suggestions on the registration cards.

name.ext <Y/N> [optional switches] ♦

FASTBACK from a batch file. It's
 mod 1. Simply answer each question, in
 ate the answers with a space or spaces.
 answered. As a debugging aid, FASTBACK
 play the command line argument.

tion of each argument.

'C:');:

A Y * N ♦

onal switches] ♦

backups or incremental backups of a single
 cking up groups of unrelated files (different
 nt names, etc.). A command file will allow
 en ir idual files to be grouped into a

here. The name may be any legal DOS file
 should contain only valid ASCII characters
 extra characters in the file). The last line
 similar to the DOS 'BACKUP' command.

listed below:

[S] [/M] [/V]

rive name

ath

lename and extension

ubdirectories to be included

only the files which have changed

as read-after-write verify

l delete the catalog file prior to a full
 mand file, this action is under user control.

FASTBACK.

The special line

/DELCAT

will cause the catalog file to be deleted. Unless this is the last line of the
 command file, a new catalog file will be created.

Example (invokes command file '\FB.CMD'):

C>FASTBACK @ \FB.CMD ♦

Example command file (back up all of drives 'C:' and 'D:'):

C:** /S
 D:** /S

Optional Switches

To provide added flexibility, FASTBACK will accept a number of switches on
 the command line. Following DOS conventions, a switch is always preceded
 by a forward slash ('/'). Each switch is listed and defined below.

/v

Causes all diskettes to be read immediately after they are written.
 This is not as useful as it sounds because:

- 1: Verify at least doubles the backup time.
- 2: An on-the-fly verify only verifies that data can be read from the floppy
 disk. It doesn't verify that the data is the same data read from the hard
 disk. For instance, a bad memory chip could alter the data during the
 copy process. This corrupted data will be stored properly on the floppy
 disk, but it is NOT the same data that is on the hard disk.
- 3: An on-the-fly verify does not guarantee that data can be read from a
 mis-seated diskette. That is, if the diskette is crooked during the writing
 process, to be read it would need to be mis-seated in exactly the same
 way.
- 4: FASTBACK implements error correction techniques to recover up to 80
 bad sectors (one per track, each side) on a 360K diskette. Up to 160 bad
 sectors may be recovered from a 720K or 1.2Mb diskette. This protection
 is there even though the sector may have been damaged AFTER THE
 BACKUP WAS MADE! This places the odds heavily in your favor,
 without wasting any time.

When should '/v' be used? In our opinion, never. Instead, use
 FRESTORE's 'Verify' function which will perform a true file-by-file
 comparison. If you really want to be safe, make a backup, verify it
 with FRESTORE, then make another backup (on separate diskettes,
 of course). Why was this option included? We really read those
 suggestions on the registration cards.

FASTBACK.

page 8.

/360

Will cause FASTBACK to use the 360K floppy disk drive on systems which have a high capacity drive and a standard drive. This will generate diskettes which can be reliably read by standard (360K) drives.

/720

Valid option for systems with 1.2Mb 'AT' style drives. Allows standard (cheaper) media to be used in place of the special high-density media normally required.

/nowrite

Disables updates to the directory archive bit and disables updates to the catalog. Very useful in two specific situations: 1) When a damaged system is about to go in for a repair and a last ditch effort is being made to back up the data. 2) To get a copy of data from a hard disk for transfer to another system without disturbing the archive bits or the catalog.

NOTE: if diskettes are created with the /360 or /720 switch, you must use the same switch on FRESTORE.

FASTBACK.

Section 6: FRESTORE—Advanced Use

The program is fully contained in the file which may be copied to any area of your system. The following options are allowed on the command line to handle format is:

FRESTORE [*optional switches*] ♦

Optional Switches

/360

Will read diskettes created on 360K drives.

/720

Will read diskettes created on 720K drives. Diskettes must have at least one high-capacity format.

Most FRESTORE commands are obvious and need no explanation:

The '-' command will switch the directory on the floppy disks. This is useful as you move around the directory. The default is dependence on the hard disk catalog. The '-' command applies to the most recent backup set. To use the floppy directory. To use the hard disk directory, press the '+' key.

'Control-C'

'Control-C' will abort a command which is useful to cancel a command which is in progress. As a side effect, 'Control-C' is accepted regardless of the time and date. With the '-' command, this allows the program to be accessed without leaving the program.

the 360K floppy disk drive on systems
ive and a standard drive. This will
be reliably read by standard (360K)

1.2Mb 'AT' style drives. Allows
e used in place of the special
required.

ory archive bit and disables updates to
o specific situations: 1) When a
o in for a repair and a last ditch effort is
a. 2) To get a copy of data from a hard
stem without disturbing the archive

with the /360 or /720 switch, you
FRESTORE.

FASTBACK*

Section 6: FRESTORE—Advanced Use

The program is fully contained in the file \FASTBACK\FRESTORE.EXE which may be copied to any area of your disk. As with FASTBACK, switches are allowed on the command line to handle special situations. The command format is:

FRESTORE [*optional switches*] ♦

Optional Switches

/360

Will read diskettes created on 360K drives.

/720

Will read diskettes created on 720K drives. Of course, your system must have at least one high-capacity drive (either 720K or 1.2Mb).

Most FRESTORE commands are obvious, but two commands need some explanation:

'-'

The '-' command will switch the display from the catalog file to the directory on the floppy disks. This requires that diskettes be changed as you move around the directory. Its purpose is to preclude any dependence on the hard disk catalog file. Also, the catalog file only applies to the most recent backup set; to access older sets you must use the floppy directory. To use the catalog file after pressing the '-' key, press the '+' key.

'Control-C'

'Control-C' will abort a command that is in progress. In particular, it is useful to cancel a command which is demanding a particular diskette. As a side effect, 'Control-C' will force a diskette to be accepted regardless of the time and date of creation. In conjunction with the '-' command, this allows different backup sets to be accessed without leaving the program.

Section 7: FINSTALL

The program is fully contained in the file 'FASTBACK\FINSTALL.EXE' which may be copied to any convenient area of your disk. The purpose of FINSTALL is to determine the characteristics of the host computer and generate customized versions of 'FASTBACK.EXE' and 'FRESTORE.EXE'. If you have already installed FASTBACK, FINSTALL will reconfigure the existing programs in the directory '\FASTBACK'. If you have other copies of FASTBACK.EXE or FRESTORE.EXE, they will not be affected. If the programs are not found in \FASTBACK, FINSTALL will create the directory and copy them from the distribution diskette.

As new hardware support is added to FASTBACK, FINSTALL will change. A detailed description is not included here. Instead, complete descriptions and narrative text will appear on the screen.

Command format:

FINSTALL ♦

Section 8: Catalog File

The catalog file provides rapid lookup of files. The actual directory for backup diskettes is not necessary to the operation.

To disable the catalog file altogether, simply delete '\FASTBACK\'.

The catalog file always exists in the directory '\FASTBACK'. It is a printable ASCII, fixed length records, string file. It can be made by printing the file '\FASTBACK\FASTBACK.CAT'. FASTBACK.CAT may be manipulated by any database management program. NEVER delete '\FASTBACK.CAT.' ALWAYS WORK WITH A COPY OF THE CATALOG FILE. To delete the catalog file, erase it. FASTBACK will create a new one if it is missing.

The catalog file contains an entry for each backup set. Each backup set consists of a full backup and the subsequent incremental backups. Consequently, FASTBACK will create a new one whenever a full backup is performed. If the command '/DEL CAT' is encountered in a command file, FASTBACK will delete the catalog file. (FASTBACK—ADVANCED USE) Any directory is protected from overwriting. To re-use the backup using 'FASTBACK' or manually erase the catalog file.

the file 'FASTBACK\FINSTALL.EXE' in the root area of your disk. The purpose of this file is to store the characteristics of the host computer and the files 'FASTBACK.EXE' and 'FRESTORE.EXE'. If you run FASTBACK, FINSTALL will reconfigure the files in the directory 'FASTBACK'. If you have other copies of the files, they will not be affected. If the files are not in the directory 'FASTBACK', FINSTALL will create the directory on the diskette.

When you run FASTBACK, FINSTALL will change the files in the directory. Instead, complete descriptions and details will be written to the file.

FASTBACK*

Section 8: Catalog File

The catalog file provides rapid lookup of files in your most recent backup set. The actual directory for backup diskettes is contained on each diskette. The catalog file is not necessary to the operation of FASTBACK or FRESTORE.

To disable the catalog file altogether, simply remove the directory 'FASTBACK'.

The catalog file always exists in the directory 'FASTBACK'. The format is printable ASCII, fixed length records, strings padded with spaces. Hardcopy can be made by printing the file 'FASTBACK\FASTBACK.CAT'. Copies of FASTBACK.CAT may be manipulated by sorting, editing, or perhaps loading into a database management program. NEVER CHANGE THE FILE 'FASTBACK.CAT.' ALWAYS WORK WITH A COPY. If you suspect damage to the catalog file, erase it. FASTBACK will create a new one.

The catalog file contains an entry for each file in the most recent backup set. A backup set consists of a full backup and the following incremental or partial backups. Consequently, FASTBACK will erase the catalog file and create a new one whenever a full backup is performed OR when the command '/DEL CAT' is encountered in a command file (see 'FASTBACK—ADVANCED USE'). Any diskette listed in the catalog file is protected from overwriting. To re-use these diskettes, either make a full backup using 'FASTBACK' or manually erase 'FASTBACK.CAT'.

Section 9: Speed

FASTBACK is actually several programs executing at the same time (time-sharing). One part uses DOS to search the directory, open files, and read files. Another part writes directly to the floppy disk drive. The floppy disk handler always operates at the same speed and consumes 6%-8% of the total CPU time. The other 92%-94% of the CPU time is spent reading the hard disk. The indicator 'DOS Performance' on the FASTBACK screen is a ratio of read time to write time. 100 means the hard disk is being read faster than the floppy disk can accept data. A low number (0-20) means the floppy disk is ahead and waiting on DOS to read the hard disk.

Causes of Reduced Performance

Slow disk changes

Disks can be changed easily in 4 seconds or less by using both hands. The technique:

1. Hold a diskette in one hand
2. Wait for the prompt
3. Use free hand to remove diskette
4. Insert diskette

Using unformatted diskettes

Since FASTBACK has special error correction codes built into the format, diskettes previously formatted by DOS are considered unformatted by FASTBACK. DOS takes 65 seconds to format a 360K diskette. FASTBACK will format AND fill it with data in only 40 seconds.

Poor DOS performance

The thing that impacts DOS performance more than anything else is the number of entries in a single subdirectory. When the directory gets too large to fit in DOS's cache, performance will suffer by a factor of 5 to 15.

A partial solution is to increase the size of the cache, determined by the 'BUFFERS=' statement in 'CONFIG.SYS'. Each buffer will hold 16 directory entries; the maximum value (99) can hold 1584 directory entries, but DOS needs buffers to open and read a file, so directories with more than (appx.) 1400 files will cause tremendous performance degradation. Since DOS uses a sequential search, the time required for directory searches can increase exponentially with the number of clusters in the directory. BACKUP TIME CAN INCREASE FROM 8 MINUTES TO SEVERAL HOURS! Once the directory has been expanded, it will not shrink until it is removed and re-created. This kind of degradation will affect any program which uses the disk. It is strongly recommended that you limit the number of files in a single subdirectory to 100-150. If you have a large number of files in a subdirectory, raise the 'BUFFERS=' value to 99.

Section 10: Hard Disk Errors

Hard disks are not perfect. Even a brand new disk (even a brand new hard disk will) have bad sectors. Bad sectors can cause data loss. When your disk was formatted, the bad sectors were marked as bad and not attempt to use them. If you ever see a message like "reading drive C:", you may have developed a bad sector. This is NOT a minor problem and should be corrected immediately. A program which tests the disk and maps out bad sectors (version 3.0) is preferred over formatting. HARD DISK, SEE SECTION 11!!! When you are presented with three options

A) abort

Exits FASTBACK. Diskettes already filled with data. Problems restoring files from the last disk.

R) retry

DOS will re-try the operation. Since 5 retries probably won't work. Everyone tries it and

I) ignore

This is the only way to continue the backup. If the disk could not be read with garbage, which FASTBACK will set. IT IS UP TO YOU TO REMEMBER WHICH FILES TO TAKE THE APPROPRIATE ACTION. A text file using your text editor. An executable program is almost impossible to re-construct. Other files, such as database files, fall somewhere between the two. It is that there is no way to tell that the file is bad (again) YOU MUST REMEMBER WHICH FILES TO

ams executing at the same time
to search the directory, open files, and
ly to the floppy disk drive. The floppy
same speed and consumes 6%-8% of the
of the CPU time is spent reading the hard
' on the FASTBACK screen is a ratio of
ne hard disk is being read faster than the
number (0-20) means the floppy disk is
the hard disk.

onds or less by using both hands. The

ne hand

move diskette

rection codes built into the format,
OS are considered unformatted by
o format a 360K diskette.
with data in only 40 seconds.

ance more than anything else is the
ctory. When the directory gets too large
ill suffer by a factor of 5 to 15.

ze of the cache, determined by the
SYS'. Each buffer will hold 16 directory
hold 1584 directory entries, but DOS
so directories with more than (appx.)
ormance degradation. Since DOS uses a
or directory searches can increase
sters in the directory. BACKUP TIME
TO SEVERAL HOURS! Once the
ot shrink until it is removed and
will affect any program which uses the
you limit the number of files in a single
large number of files in a subdirectory,

Section 10: Hard Disk Errors

Hard disks are not perfect. Even a brand new hard disk can (and probably will) have bad sectors. Bad sectors can also develop after a period of use. When your disk was formatted, the bad sectors were flagged so that DOS will not attempt to use them. If you ever see an error message which says "Error reading drive C:", you may have developed a bad hard disk sector. This is NOT a minor problem and should be corrected as soon as possible. A program which tests the disk and maps out bad sectors (like Norton Utilities version 3.0) is preferred over formatting. IF YOU ELECT TO FORMAT YOUR HARD DISK, SEE SECTION 11!!! When the error occurs during FASTBACK, you will be presented with three options "A)bort, R)etry, or I)gnore".

A)bort

Exits FASTBACK. Diskettes already filled are still valid, but expect some problems restoring files from the last disk.

R)etry

DOS will re-try the operation. Since 5 retries have already occurred, this probably won't work. Everyone tries it anyway.

I)gnore

This is the only way to continue the backup. DOS will fill the data area that could not be read with garbage, which FASTBACK will store on your backup set. IT IS UP TO YOU TO REMEMBER WHICH FILE IS DAMAGED AND TAKE THE APPROPRIATE ACTION. A text file can probably be recovered by using your text editor. An executable program (*.COM' or *.EXE') will be almost impossible to re-construct. Other files, such as spreadsheet files and database files, fall somewhere between the two extremes. The important thing is that there is no way to tell that the file has been corrupted. That is why (again) YOU MUST REMEMBER WHICH FILE WAS DAMAGED!!!

Section 11: Before Formatting your Fixed Disk

Formatting your hard disk will remove all data. This means you will rely on your backup system to recover the data. While FASTBACK is very reliable, there are other factors to consider. The first is: Why are you considering a FORMAT? Many times, a system will develop problems (hardware or software), a backup is made, and the disk reformatted. Catch-22: if a system is not working properly, it probably cannot make a backup! The solution is to make regular backups, before problems develop.

Before you type 'FORMAT':

- 1: Make a full backup. DO NOT OVERWRITE YOUR OLDER BACKUP DISKETTES.
- 2: Use FRESTORE's 'Verify' function to make sure your backup is valid.
- 3: Make another full backup. DO NOT OVERWRITE YOUR OLDER BACKUP DISKETTES, INCLUDING THE ONE YOU JUST MADE.

After the format, restore the files. If the machine had a problem, you may find files which were damaged before the backup was made. In that case, the file must be restored from backups which were made before the problem developed. (Regular backups WERE made, right?).

Section 12: In Case of Trouble

The following information was copied from

FASTBACK and FRESTORE

Q: The red light on the floppy drive is on.

A: FASTBACK and FRESTORE are designed to be monitoring the disk drive. There are consequences of opening a running operation as long as the drive is not writing to the diskette. Skeptics should remember that 8-inch

FASTBACK

Q: The message 'WRONG DISK' or 'CANNOT DISK CHANGE'.

A: A partial backup has been requested. The catalog indicates that a backup set will be appended to the last diskette in the set until the last diskette is found. If the diskette does not exist, abort the backup and erase the file '\FASTBACK\FASTBACK.CAT'.

FASTBACK

Q: The message 'CANNOT FORMAT/VOLUME'.

A: The disk controller cannot format the diskette reported when standard diskettes are used. The proper media is being used. A bad diskette is the error, but to do so it must occur in the diskette. Another possible cause is a disk drive that is too fast. FASTBACK stores more data on the diskette than added error correction information, and a bad disk drive. There are programs available to format a floppy disk drive without removing the diskette, usually regulated to 0.5%.

FASTBACK

Q: The message 'CANNOT OPEN, FILE NOT FOUND'.

A: DOS returned a file name to FASTBACK that a subsequent 'Open File' call was unsuccessful. BASIC can create file names in the file name characters (most common is a file name that is too long). cause, use BASIC to rename the offer.

Fixed Disk

ve all data. This means you will rely on data. While FASTBACK is very reliable, the first is: Why are you considering a disk reformatted. Catch-22: if a system is cannot make a backup! The solution is to ms develop.

OVERWRITE YOUR OLDER BACKUP

tion to make sure your backup is valid.

NOT OVERWRITE YOUR OLDER DING THE ONE YOU JUST MADE.

he machine had a problem, you may find backup was made. In that case, the file h w made before the problem made, right?).

FASTBACK

Section 12: In Case of Trouble

The following information was copied from our Tech Support files.

FASTBACK and FRESTORE

Q: The red light on the floppy drive is on all the time.

A: FASTBACK and FRESTORE are designed to sense disk changes by monitoring the disk drive. There are many myths about the consequences of opening a running drive, but no data loss will occur as long as the drive is not writing to the diskette. The DRIVE will not be damaged by opening the door even if a write operation is in progress. Skeptics should remember that 8-inch drives never stop spinning.

FASTBACK

Q: The message 'WRONG DISK' or 'CAN'T READ LABEL' appears after a disk change.

A: A partial backup has been requested, or a command file is being used. The catalog indicates that a backup set has been started, so the data is to be appended to the last diskette in the set. The backup cannot continue until the last diskette is found.

If the diskette does not exist, abort the program with the 'ESC' key, erase the file '\FASTBACK\FASTBACK.CAT', and re-start.

FASTBACK

Q: The message 'CANNOT FORMAT/WRITE' appears.

A: The disk controller cannot format the current track. This error is usually reported when standard diskettes are used in a 1.2Mb drive. Make sure the proper media is being used. A bad spot on the diskette may cause the error, but to do so it must occur in an ID field (very unlikely). Another possible cause is a disk drive which is running more than 2% fast. FASTBACK stores more data on a track than DOS because of the added error correction information, and is therefore less tolerant of a fast disk drive. There are programs available which can measure the speed of a floppy disk drive without removing the cover. Modern disk drives are usually regulated to 0.5%.

FASTBACK

Q: The message 'CANNOT OPEN, FILE SKIPPED' appears.

A: DOS returned a file name to FASTBACK on a 'Find Next' call, but a subsequent 'Open File' call was unsuccessful. The filename is probably illegal. BASIC can create file names in the directory with illegal characters (most common is a file name containing a space). If this is the cause, use BASIC to rename the offending files.

FASTBACK

Q: The message 'NEGATIVE LENGTH, FILE SKIPPED' appears.

A: There is a directory entry with a negative length. DOS didn't put it there. The directory structure is probably damaged, so expect other problems.

FASTBACK

Q: The message 'CHANGE DISKS' appears on the first disk even though there is a diskette in the drive.

A: On the first disk, FASTBACK must detect an empty drive before proceeding. This is to prevent the destruction of the distribution diskette. The condition is caused by changing the disks before the prompt appears. The solution is to open the drive door for 1 second and then close it.

FASTBACK

Q: On systems with 2 floppy disk drives, the message 'CHANGE DISKS' does not go away after a disk change.

A: This is normal. Since the floppy disk controller is already in use writing a diskette, FASTBACK cannot monitor the other drive to sense a disk change. The problem will rectify itself as soon as the current diskette is filled.

FASTBACK

Q: The message 'SEEK ERROR DURING FORMAT' appears.

A: DOS reset the floppy disk controller while FASTBACK was using it. This is usually because an error was encountered on the **HARD** disk (during the retry operation, all I/O devices are reset). Try using a diskette already formatted by FASTBACK. A seek error is not catastrophic unless a disk is being formatted. You may also try removing the offending file from the hard disk and mapping out the bad sector. Norton Utilities Version 3.0 contains a program (DISKTEST) which will scan the hard disk for bad sectors and, if found, map them out so DOS will not try to use them again.

EASTBACK

10 Megabytes/8 Minutes

For IBM-PC™, XT™, AT™ and Compatibles

Software License Agreement *6% 291-7283 Tech Support*

Important! The enclosed materials are provided to you on the express condition that you agree to this software license. By using any of the enclosed diskette(s), you agree to the following provisions. If you do not agree with these provisions, return these materials to your dealer, in original packaging, within three days from receipt, for a refund.

1. This software and the diskette on which it is contained (the "Licensed Software"), is licensed to you, the end user, for your own internal use. You do not obtain title to the licensed software or any copyrights of proprietary rights in the licensed software. You may not sublicense, rent, lease, convey, modify, translate, convert to another programming language, decompile or disassemble the licensed software for any purpose.

2. The licensed software is provided "as-is." All warranties and representations of any kind with regard to the licensed software are hereby disclaimed, including the implied warranties of merchantability and fitness for a particular purpose. Under no circumstances will the manufacturer or developer of the licensed software be liable for any consequential, incidental, special or exemplary damages even if appraised of the likelihood of such damages occurring. Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

3. You may use this software on more than one computer provided there is no chance it will be used simultaneously on more than one machine.

* This product is in no way associated with or has origination in Fisher Scientific or Allied Corporation.



7942 Picardy Avenue, B-350

Baton Rouge, Louisiana 70809

Sales (213) 493-4483 Toll Free (800) 225-2775

Tech Support (504) 767-0075 Toll Free (800) 228-6127

291.7221